

## **REMARKS**

Applicants have been amended the claims in order to more particularly define the invention taking into consideration the outstanding Official Action. These amendments do not introduce new matter into the application.

Reconsideration of this application is respectfully requested in view of the foregoing amendments and the following remarks.

### **I Response to Rejections Under 35 U.S.C. § 102**

The rejection of claims 9-14 under 35 U.S.C. § 102(e) as being anticipated by Ishiwata et al. (U.S. Patent No. 6,792,013) hereinafter referred to as Ishiwata, is respectfully traversed on the grounds that the Ishiwata patent does not disclose that the operational amplifier charges the write-control signal with a virtually grounded effect, as claimed.

Instead, in the data write controller of the Ishiwata patent, the D/A converter 8 is used to supply the set voltage data WRPOW and the terminal WLD is driven by the operational amplifier 4 to follow the voltage based on the data WRPOW (col. 8 line 1-19, fig. 3 and fig. 4). As a result, Ishiwata clearly does not teach that the operational amplifier charges the write-control signal with a virtually grounded effect. Accordingly, in terms of the hardware structure, the invention

is different from the cited reference. Furthermore, this difference provides in the advantage that the die size of the invention is much smaller than the die size of Ishiwata, resulting in a simpler circuit implementation in comparison with that of Ishiwata and thus the practical advantage of lower cost. Withdrawal of the rejection of claims 9-14 in view of the Ishiwata patent is accordingly requested.

## **II Response to Rejections Under 35 U.S.C. § 103**

Claims 1-5, 8, 15-19, and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishiwata et al. (U.S. Patent No. 6,792,013) in view of Dosho et al. (U.S. Patent No. 5,822,236).

The present invention provides an apparatus and method for controlling a data write operation in an optical storage system comprising an operational amplifier (element 201 described in the specification) having a positive input end, a negative input end and an output end for outputting a write-control signal at the output end, the operational amplifier being operated in one of a short-term mode, a long-term mode and a closed-loop mode. In the short-term mode, the operational amplifier is formed as a voltage follower for initializing the write-control signal; in the long-term mode, the operational amplifier charges the write-control signal with the virtual grounded effect, and in the closed-loop mode, the charged write-control signal is employed to record data on a CD.

Neither the Ishiwata patent nor the Dosho patent discloses or suggests providing the an operational amplifier, as claimed, so that the operational amplifier is formed as a voltage follower for initializing the write-control signal, and the operational amplifier 201 is used to charge the write-control signal with the virtual grounded effect. Instead, the Ishiwata teaches using the virtual ground for initialization. Ishiwata does not disclose the operational amplifier is formed as a voltage follower for initializing the write-control signal in the short-term mode. Dosho, on the other hand, does not provide for any sort of control mechanism for write-control signal which is employed to record data on a CD

According to the Examiner, Ishiwata discloses using the virtual grounded effect for initializing the write-control signal. However, as shown in Fig.4 of Ishiwata, the switch states are in the initiation mode, the positive terminal is set to ground, and the negative terminal is set to open, which cause the voltage of negative terminal equal to 0V ( $V^- = V^+ = 0V$ ). Ishiwata uses the virtual ground effect to initialize the write-control signal rather than to drive the write-control signal. In the Ishiwata patent, the D/A converter 8 is used to supply the set voltage data WRPOW and the terminal WLD is driven by the operational amplifier 4 to follow the voltage based on the data WRPOW (col. 8 line 1-19, fig. 3 and fig. 4). In contrast, in the invention, the operational amplifier 201 is formed as a voltage follower for initializing the write-control signal and is used to charge the


write-control signal with virtually grounded effect. With the virtual ground effect, the invention only uses the amplifier 201 to initialize and charge the write-control signal rather than uses an expensive D/A converter to supply the set voltage data WRPOW for charging the write-control signal.

As such, not only is the hardware structure of the invention different from the cited reference, but the effect of virtual ground of the invention is also different from that of the cited reference. Thus, the applicant respectfully submits that the invention is non-obvious to those persons of ordinary skill in the art to combine the teachings of Ishiwata, Dosho, and Inaba. Claims 1-22 should be allowed and overcome the rejections under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,792,013 by Ishiwata in view of U.S. Patent 5,822,236 by Dosho, and further in view of U.S. Patent 5,477,557 by Inaba (which also does not disclose the claimed virtual grounding effect).

CONCLUSION

In view of the foregoing remarks, reconsideration and allowance of the application are now believed to be in order, and such action is hereby solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,  
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